#### **DELTA PROTECTION COMMISSION**

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#### AGENDA ITEM #7

July 14, 2000

To:

**Delta Protection Commission** 

From:

Lori Clamurro, Delta Protection Commission Staff

Subject:

Category III Ecosystem Restoration Projects Tracking Memo

Since 1995, restoration projects aimed at improving the quality of the Delta environment have been funded. The specific purpose is to implement "non-flow" related actions, also called Category III projects, to restore and enhance habitat and species populations. The term Category III comes from the State Water Resources Control Board's adopted Water Quality Control Plan for the Bay-Delta, and Category III measures are included as part of the Bay-Delta Accord of 1994. As part of this agreement, funding for Category III projects has been provided by water users such as California Urban Water Agencies (CUWA), by the Central Valley Project Improvement Act (CVPIA), and by Proposition 204 (State share) and federal appropriations.

CALFED's most recent grant proposal solicitation was circulated in April 2000, with proposals due in May 2000. CALFED staff and various technical panels are currently reviewing these proposals; a decision on which proposals will be funded in FY 2001 is expected in October 2000. Please refer to the memo titled "CALFED Ecosystem Restoration Grant Proposals for FY 2001" for a description of project proposals submitted for the Delta area.

# CUWA - Solicitation 1 (1995) -- no projects relevant to Delta

### CUWA - Solicitation 2 (September 1996)

Prospect Island Habitat Restoration Project	Inventory of Rearing Habitat for Juvenile Salmon in the North Delta and Lower Sacramento and Cosumnes Rivers	Decker Island Tidal Wetland Enhancement Pilot Project	Yolo Bypass Habitat Restoration Study	Predicting the Evolution of Ecological Functions from Restoration of Diked Wetlands in the Delta	Title Sherman Island Levee Habitat DWR Demonstration Project DWA - Solicitation 2 (September 1996) Applicant(s)
Corps of Engineers DWR	CSU Sacramento	Port of Sacramento	DWR	University of Washington	Applicant(s) DWR RD 341
Purchase Prospect Island and restore 1,300 acres of shallow water, tidal wetlands, and aquatic habitat. (The \$2.5 million in Category III funds approved for this project consists of \$1.25 million for construction of the project and \$1.25 million for long-term operations and maintenance.)	Conduct a survey of rearing habitat for juvenile salmon in the north Delta. Attempt to distinguish races of juvenile salmon.	Establish 35-40 acres of tidal wetland on Decker Island, and improve habitat on the remainder of the 70-acre site.	Study to provide data and technical recommendations on Bypass modifications, due to strong evidence of mortality to salmon and other species from stranding.	Two-year study will compare both naturally- and artificially-breached diked wetland sites to evaluate the rate, pattern, and long-term success of breached-dike restoration (as compared to natural marsh sites).	<u>Description</u> Construct 2.5-acre in-channel island using dredge material stored on Sherman Island.
\$2,500,000 ic	\$24,500	\$399,000	\$256,000 s	\$575,172	Funding \$960,000
Revised FONSI May-00. Under evaluation.	<u>Project complete</u> Nov-99 Final report available.	Funding terminated.	Project is complete.	Additional \$100,172 to increase field work and include an element for bird habitat.	Status Design complete. Applicants looking for additional funding.

Contaminant Effects on Smelt	Sedimentation Movement and Availability in the Delta	Effects of Wetlands Restoration on Methyl Mercury Production	Monitoring of Delta Contaminants	CALFED - Solicitation 1 (July 1997)  Title Hastings Tract Fish Screen Feasibility Study  Land C	Cosumnes River Preserve Acquisition	Introduction of Non-Indigenous Aquatic Species Research Program	<u>Title</u> Prospect Island Monitoring Plan
U.C. Davis	Usas	U.C. Davis	DeltaKeeper	Applicant(s) Hastings Island Land Company	TNC	San Francisco Estuarine Institute	Applicant(s) DWR
Two-year study will evaluate contaminant effects on smelt by quantifying the overall health, condition, and growth rate of smelt collected from various sites.	Monitor sediment transport at several sites to describe the movement of the sediment needed for habitat restoration.	Yield baseline data quantifying the levels of methyl mercury production from diked and reflooded wetlands.	One-year pilot study to establish baseline toxicity \$100,000 data at 12-14 sites throughout the Delta and eastside tributaries.	Description Feasibility report on the installation of fish screens on gravity intake pipes and the relocation of the pipes from Cache Slough to Lindsey Slough.	Acquire 4,356-acre Valensin Ranch property.	Develop regional monitoring program to provide early warning for eradication of mitigation. Assess priority for control of nonindigenous marsh plants. Public outreach on ballast water invasions. Examine post-invasion control mechanisms.	<u>Description</u> Develop post-project monitoring plan for the Prospect Island project.
\$437,236	\$1,046,200	\$546,171	\$100,000	Funding \$27,000	\$12,000,000	\$197,000 s	<u>Funding</u> \$35,000
Contract signed Nov-98. Project underway.	Project underway. First workshop on monitoring held Feb-00.	Contract signed Sep-98. Project underway; 1st year summary report complete.	Contract signed Sep-98 Project underway.	Status Contract being prepared.	Project complete. (Escrow closed Dec-96.)	Project 90% complete.	Status Project complete.

Mokelumne River Setback Levee and Habitat Restoration	Cosumnes River Preserve Start-Up Stewardship and Restoration (see "Cosumnes Floodplain Acquisition and Restoration" [pg. 4])	Tyler Island Levee Protection and Habitat Restoration Pilot Project	Franks Tract Recreation Area Wetlands Habitat Restoration	Liberty Island Acquisition	Demonstration Project for Protection and Enhancement of In-Channel Islands	<u>Title</u> Jepson Praire Preserve Restoration
RD 2110	TNC Wildlife Conser- vation Board	Habitat Assessment & Restoration Team, Inc.	Moffat & Nichol Engineers DPR DWR	Trust for Public Land (for USFWS)	Association of Bay Area Governments	Applicant(s) Solano County Farmlands and Open Space Fdn.
Consruct a 3.4-mile levee set back approxiately 400 feet from the existing levee.	Conduct baseline monitoring of vegetation, wildlife, avian, and fish resources.	Create/enhance shaded riverine aquatic and tidal \$885,202 perennial aquatic habitat along 2,000 feet of Georgiana Slough and along 3,000 feet of the North Fork of the Mokelumne River.	First phase (design and environmental documentation) funded. Design four demonstration islands along Piper Slough to restore 45 acres of perennial aquatic habitat, shaded riverine aquatic habitat, and chanel Island and shoal habitat.	Acquire 4,750-acre Liberty Island.	First phase (design) funded. Design four small restoration areas (Little Tinsley Island and Webb Tract Islands).	Three-year program will restore shaded riverine aquatic habitat along portions of Barker Slough and Calhoun Cut, restore perennial grasslands, and design a habitat corridor connecting Jepson Prairie Preserve to Prospect Island.
\$365,000	\$1,975,100	\$885,202	\$231,500	\$8,577,000	\$270,270	<u>Funding</u> \$244,801 <sup>1d</sup>
Project on hold. TNC has purchased McCormack-Williamson Tract.	Contract signed Jun-99. (Project complete.)	<u>Project complete.</u> Monitoring underway.	Budget amendment for \$16,500 awaiting approval Initial Neg Dec circulated 6-99; under evaluation and revision; design 30% comp	Project complete. Property acquired Sept-99.	Contract signed Jul-98. Prelim design complete; looking for alternative sources of funding for construction.	Status Contract signed Jan-99. Plans complete; restoration underway.

### CALFED - Solicitation 2 (September 97)

Aduit Fall-Run Chinook Salmon in the Lower San Joaquin River and South Delta	Sediment Water Quality (Designated Action)	Cosumnes Floodplain Acquisition and Restoration	Culture of Delta Smelt	Twitchell Island Subsidence Study	Cache Slough Shaded Riverine Aquatic Habitat Enhancement	Title Assessing Impacts of Selenium on USGS Restoration of the Bay-Delta Ecosystem
DFG	DFG RWQCB Delta Protection Commission	TNC	U.C. Davis	DWR USGS Nat. Heritage Inst. Northwest Hydraulic Consultants, Inc. Philip Williams & Associates, Ltd.	RD 2060	Applicant(s) USGS
Monitor upstream movement of fall-run salmon in the lower San Joaquin River and South Delta. Determine whether the installation of three temporary barriers at the head of Old River or low dissolved oxygen content significantly impede upstream migration.	Develop criteria for the Central Valley Regional Water Quality Control Board to permit reuse of material dredged in the Delta.	Acquisition of fee or easement interests on three properties (totaling 2,195 acres) contiguous to the Preserve.	Establish a functional culture system to provide smelt embryos, larvae, juveniles, and adults for laboratory testing.	First phase funded. Design and construct three large restoration pilot projects, totaling 600 acres, on Twitchell Island. Develop technical design recommendations for a restoration program to raise the surface level of subsided Delta islands.	First phase (design) funded. Design restoration for 2,000 feet of levee bank where erosion has removed shaded riverine aquatic habitat.	Description Three-year study evaluating selenium in the Bay-Delta to develop models useful for selenium management.
\$285,000	\$500,000	\$3,500,000	\$194,870	\$3,583,000	\$85,000	<u>Funding</u> \$1,627,117
Contract signed Jun-99. Project requires time extension due to delays in obtaining equipment.	All contracts signed. Technical Advisory Panel meeting regularly.	Project complete. Properties acquired Dec-98.	<u>Project complete.</u> Summary report, Oct-99.	Contract signed May-99.	Contract signed Jun-98. Topographic survey completed.	Status Contract signed Aug-98. Project underway.

מים	Cosumnes River Acquisition, TNC Restoration Planning, and Demon-BLM Stration Wildlife Conserva-	Fern-Headreach Tidal Perennial Thomas Luckey Aquatic and Shaded River Aquatic Conservation Project	Stone Lakes National Wildlife USFWS Refuge Acquisitions	Rhode Island Floodplain Manage- DFG ment and Habitat Restoration	Hastings Tract Fish Screen, Hastings Island Phase II: Construction Land Company	<u>Applicant(s)</u> Cosumnes River Salmonid Barrier Fishery Fdn. Of Program California (FFC)
Two-year study to determine baseline information regarding the green sturgeon's biological	Acquire fee title interest in a 300-acre property contiguous to the Cosumnes River Preserve.	Exercise purchase option on the Fern-Headreach Island Complex, and commit the entire 168-acre complex to shallow water habitat (140 acres) and shaded riverine aquatic habitat (28 acres).	Acquire fee title interest in one property totaling about 500 acres.	First phase (survey) funded. Survey conditions to determine specific improvement needs. Plan to improve fish and wildlife carrying capacity on the 67-acre island by increasing the width, height, and stability of the island's breached levees.	Place fish screens on gravity intake pipes, and relocate the pipes from Cache Slough to Lindsey Slough.	<u>Description</u> Install fish passage structures at two summer dams in the lower Cosumnes River. Upgrade fish ladders at Granlees Dam to current DFG hydraulic specifications.
\$241,000	\$750,000	\$425,000	\$1,900,000	\$25,000	\$271,250	<u>Funding</u> \$188,255
Contract signed Mar-99.	Contract signed May-99.	Contract signed May-99. Acquisition and contaminant surveys being completed.	USFWS requests add'I \$500,000 to purchase this site.	Contract signed Apr-99.	Contract being drafted.	Status Contract signed Mar-99. Permits submitted.

Developing a Methodology to Accurately Simulate the Entrainment of Fish	Water Challenge 2010	Bay-Delta Environmental Restor- ation Education Program	Discover the Flyway	Traveling Film Festival	Lower Mokelumne River Watershed Stewardship Plan	Lower Putah Creek Watershed Stewardship Plan	<u>Title</u> Watershed Restoration Strategy for the Yolo Bypass
DFG	S.F. Bay Model Visitor Center Corps of Engineers	Water Education Foundation	Yolo Basin Fdn.	Independent Documentary Group S.F. Public Library S.F. Recreation and Park Dept.	San Joaquin County RCD	Solano County Dept. of Environ- mental Mgt.	Applicant(s) Yolo Basin Fdn.
Purchase or lease a barge, mount a pipe, pump, and flume to hold a sampling net on board the barge, and conduct sampling of one of DWR's agricultural diversion siphons on Sherman Island.	Traveling exhibit would allow visitors to manage Delta water for ecosystem restoration and other beneficial uses. Design phase funded.	Provide outreach to increase understanding of Bay-Delta waterhsed ecology.	Two-year program to expand curriculum and activities for middle school and high school students, and expand trips and training sessions for the general public.	Package and distribute a six-film Traveling Festival about Bay and Delta habitats, wildlife, and restoration.	Develop a community-based watershed plan for the lower Mokelumne River.	Develop a community-based watershed plan for lower Putah Creek.	<u>Description</u> Develop a local implementation strategy for the ERPP's environmental restoration in the Yolo Bypass.
\$200,000	\$64,500	\$40,000	\$49,000	\$54,000	\$159,000	\$100,500	<u>Funding</u> \$244,188
Contract signed Dec-99.	Project complete. (See also Apr-99 solicitation, [pg. 10]).	Project complete.	Project complete.	<u>Project complete.</u> (See also Apr-99 solici- tation, [pg. 10])	Contract signed Apr-99. Workshops held; Lodi Winegrape Growers' workbook complete.	EPA/NFWF cooperative agreement Feb-99.	Status Contract signed Jun-99. Watershed work group is meeting.

## **CALFED - Designated Actions (February 1999)**

Assessment of Ecological and CS Human Health Impacts of Mercury in the Bay-Delta Watershed (Designated Action)	Restore Habitat on McCormack- TNC Williamson Levees (see above). (Designated Action)	McCormack-Williamson Tract Acquisition (Designated Action)	Mokelumne River Feasibility Study Co (Designated Action) Ea	Cosumnes River Feasibility Study Corp (Designated Action) TNC	Title Applicant(s) Prospect Island Monitoring Project DWR (Designated Action)
CSU San Jose	O	n	Corps of Engineers East Bay MUD	Corps of Engineers TNC	Applicant(s) DWR
Studies will be undertaken to better understand information that will lead to the reduction of mercury in resident fish tissues to levels that are not harmful to humans or wildlife.	Monitor riparian vegetation, wildlife, avian, and fish resources.	Acquire McCormack-Williamson Tract.	Study will identify, design, and estimate costs for environmental restoration and flood damage reduction opportunities along the Mokelumne River.	Study will identify, design, and estimate costs for environmental restoration and flood damage reduction opportunities along the Cosumnes River.	Description  Establish a baseline to be used as a guide for development and implementation of future projects. Info would also be used for adaptive management.
\$3,700,000	\$860,000	\$5,250,000	\$400,000	\$400,000	<u>Funding</u> \$915,000
Contract being drafted.	Contract being drafted.	Project complete. Property acquired Sept-99	Working with Corps to refine Project Study Plan.	Working with Corps to refine Project Study Plan	Status Contract being drafted.

#### CALFED - Solicitation 4 (April 1999)

Cosumnes-Mokelumne Paired Basin Studies (Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management)	Understanding Tidal Marsh Processes and Patterns	East Delta Habitat Corridor (Georgiana Slough)	Title Develop Fish Screen Criteria for U.C. Da Native Sacramento-San Joaquin Hydrau Watershed Fishes (Fish Treadmill Project)
U.C. Davis Center for Integrated Watershed Science and Management	University of Washington	Habitat Assessment & Restoration Team	Applicant U.C. Davis Hydraulics Lab
Develop a demonstration monitoring and assess- \$1,592,396 ment program for the Cosumnes and Mokelumne Rivers. Three-year study of five core areas: hydrology, geomorphology, water quality, aquatic resources, and data analysis/dissemination.  Baseline info would be used to test and validate models guiding long-term monitoring program dedicated to adaptive management.	Builds upon previously-funded project (Predicting Evolution Functions of Diked Wetlands [see pg. 1]). Conceptual model developed in earlier project will be extended to Suisun Marsh and San Pablo Bay/North Bay. Provide critical information on whether restoration of diked wetlands would provide natural wetland functions to support shallow-water habitat and rehabilitate food web.	Builds upon previously-funded project. Improve \$1 habitat conditions along 14 miles of Georgiana Slough. (Enhance existing berms, restore and enhance tidal freshwater marsh, remove exotic vegetation from berms and replace with native species, expand monitoring program initiated on Tyler Island under earlier CALFED grant [see pg. 3]).	<b>Description</b> Evaluate performance and behavior of small Delta and upstream fishes in multi-vector flows near fish screens. Develop fish screen design, flow, and operational criteria that reduce impacts of diversions on these species.
\$1,592,396	\$1,073,513 lier	\$1,133,000 3]).	Funding \$847,690
Contract signed Jan-00.	Contract being drafted.	Contract signed Nov-99.	Status Contract signed Jan-00.

Purple Loosestrife Prevention, Detection, and Control Action for the Delta	Evaluation of the Potential Impacts of the Chinese Mitten Crab on the Benthic Community in the Delta	Dissolved Organic Carbon Release from Delta Wetlands, Part I	Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River	Assessment of Pesticide Effects on Fish and Their Food Resources in the Delta	<u>Title</u> Chronic Toxicity of Environmental Contaminants in Sacramento Splittail: A Biomarker Approach
CA Dept. of Food and Agriculture	DWR	Usgs	DWR	U.C. Berkeley	Applicant(s) U.C. Davis Dept. of Animal Science
Three-year project would detect and eradicate the \$127,473 small but spreading purple loosestrife infestations in the Delta and nearby hydrologic units. (Part of this project [\$201,306]) was funded as a Nonnative Invasive Species Designated Action in July 1999; the remainder of the cost is covered here.)	Evaluate how the downstream migration of adult \$152,233 crabs impacts the food webs of the Delta and northern estuary.	Study will characterize the concentration of dissolved organic carbon released from different wetland types within the Delta and by agricultural activity. Data will address incorporation of organic carbon into Delta food web as well as health concerns associated with drinking water quality.	Develop database on source loads of oxygendepleting substances, collect additional field data, and fill data gaps in existing models. Develop a management action plan to eliminate dissolved oxygen depletion in the lower San Joaquin River near Stockton during the fall. Three-year study.	Three-year laboratory and field study to provide \$1,634,501 info on pesticide toxicity to resident species.  Results would be put into an ecological context focusing on juvenile chinook salmon and their prey.	Measure four biological indicators (contaminant \$693,895 exposure, general condition indices, organ & reproductive dysfunction, and individual-level response) to evaluate the chronic effects of contaminants (mercury, selenium, diazinon, organochlorine pesticides) on the health of splittail. Three-year study.
Contract signed Oct-99.	Contract being drafted.	Contract being drafted.	Contract being drafted.	Scope approved; waiting for invoicing resolution	Status Contract signed Jan-00.

Zebra Mussel Detection and Outreach Program (Designated Action)	Reducing the Risk of Importation and Distribution of Nonnative Invasive Species (NIS) Through Outreach and Education (Designated Action)	Nonnative Invasive Species (NIS) Advisory Council (Designated Action)	CALFED - Designated Actions (July 1999)  Title Inundation of a Section of the Yolo Nat. Heritage In Bypass to Restore Sacramento Splittail and Other Native Species (Designated Action)	Traveling Film Festival Exhibit	Title Water Challenge 2010 Exhibit
DWR	U.C. Davis	USFWS	<b>s (July 1999)</b> <u>Applicant(s)</u> Nat. Heritage Inst.	Independent Docu- mentary Group	Applicant(s) Corps of Engineers S.F. Bay Model Visitor Center
Three-year project would educate the public about zebra mussels, and establish and operate an early detection system in the Central Valley, Bay-Delta, and water storage/delivery systems.	Prevent future introductions by educating industries and representatives of adverse impacts of releasing NIS into the environment. Outreach will be through a series of workshops, public service announcements, and development of a video, a brochure, and a NIS website.	Establish a NIS Advisory Council to monitor and coordinate the efforts of the NIS program, and address issues requiring the commitment of agencies with existing NIS responsibilities.	<u>Description</u> First phase (baseline monitoring, alternatives analysis, and design) funded. Pilot project will inundate a portion of the Yolo Bypass, on about 5,000 acres along its eastern edge.	Expand film exhibit in the Bay Area, as well as into Sacramento and other locales in the Central Valley and North Delta. CALFED funded this program in an earlier solicitation.	Description  Construction and installation of hands-on exhibit allowing users to apportion water from one large tank into three smaller tanks (representing the needs of agriculture, cities, and the environment).  CALFED previously funded the design phase.
\$100,000	\$105,466	\$50,000	Funding \$820,679	\$51,500	Funding \$52,015
Contract being drafted.	Contract being drafted.	Contract being drafted.	Status Contract being drafted.	Contract being drafted.	Status Contract being drafted.

Culture of Delta Smelt Phase II & III U.C. Davis (see pg. 4)	CALFED - FY 2000 Projects (1) Title Canal Ranch Habitat Restoration Phase II	Effects of Introduced Clams on the Food Supply of Bay-Delta Fisheries (Designated Action)	Guidebook to Prevent and Control Nonnative Invasive Plants in Shallow Water Habitats of the Bay-Delta (Designated Action)	Introduced Spartina Eradication Project (Designated Action)	Title Purple Loosestrife Prevention, Detection, and Control in the Delta and Associated Hydrologic Units (Designated Action)
U.C. Davis	chosen from prop <u>Applicant(s)</u> DFG	San Francisco State University	San Francisco Estuarine Inst.	CA Coastal Conservancy	Applicant(s) CA Dept. of Food and Agriculture
Spawning and rearing of larval smelt, using culture system developed during Phase I (see pg. 4). Evaluate parameters of temperature and rearing-tank size on smelt performance.	Title  Applicant(s)  Canal Ranch Habitat Restoration  Phase II  DFG  Canal Ranch Habitat Restoration  Capplicant(s)  Cappli	Study how the introduced Asian clam has altered the feeding environments of native fish. Provide a detailed description of the status of the food web and likely impediments to rehabilitation.	Guidebook would provide information for local control of the highest priority species of nonnative plants in shallow water habitats.	First phase (demonstration project) funded. Significantly reduce/elimate 1,000 acres of Spartina in the Bay; prevent spread into new Delta restoration projects.	Description Three-year project would detect and eradicate the small but spreading purple loosestrife infestations in the Delta and nearby hydrologic units.
\$431,606	Funding \$135,940	as altered \$100,490 . Provide e food web	\$76,750	\$250,000	<b>Funding</b> \$201,306
Contract being drafted.	Status Contract being drafted.	Contract being drafted.	Contract being drafted.	Contract being drafted.	<u>Status</u> Contract being drafted.

SOUTH DELTA PLANNING PROGRAM	Biological Assessment of Green Sturgeon, Phase II (see pg. 6)	Dissolved Organic Carbon Release from Delta Wetlands, Part II (see pg. 8)	McCormack-Williamson Tract Phase II Monitoring Program (see above)	McCormack-Williamson Tract Phase II Restoration Planning	<u>Title</u> Liberty Island Acquisition and Restoration Phase I (see pg. 3)
CALFED	U.C. Davis	Uses	U.C. Davis	DWR	<u>Applicant(s)</u> USFWS
Funding for exploration of habitat restoration opportunities in the South Delta area as part of the South Delta bundle of actions for Stage 1A.	Continuation of previously-funded CALFED study to obtain baseline information on green sturgeons' biological requirements in watershed.	Part I funded by CALFED focused on quality of organic carbon (OC) released from wetlands.  Part II will examine amounts of OC released from wetlands and ag operations; include mgt strategy to limit introduction of OC into Delta channels.	Conduct historic research and baseline studies necessary for restoration planning and development of monitoring program for M-W Tract project.	Design and environmental documentation for M-W Tract restoration project.	Description Funding Purchase the two remaining privately-owned pro- \$2,623,043 perties on Liberty Island (181 + 268 acres), conduct restoration planning for Liberty Island, implement restoration plan and monitoring plan.
\$1,000,000 e	\$205,013	\$1,030,000	\$572,886 t.	\$365,650	Funding \$2,623,043
Awaiting approval.	Contract being drafted.	Contract being drafted.	Contract being draffed.	Contract being drafted.	<u>Status</u> Contract being drafted.